IN THE SPECIFICATION

Please amend the paragraph starting at page 2, line 4 of the specification as follows:

In some situations, a tire that is beginning to fail includes components that are frictionally moving with respect to each other. The friction generates heat that will raise the internal temperature of the tire. Overheated tire components break down and weaken the tire. Although monitoring devices configured to sense temperature will create a warning signal when the overheated tire condition has warmed the tire or the tire chamber to a certain level, they generally do not create a signal at the beginning of an overheated tire condition. Known tire monitoring devices will not create the warning signal at the beginning of an overheated tire condition when the temperature sensor of the monitoring device is not positioned close to the components that are creating the friction. With some prior art tire monitoring devices, the monitor will not generate an alarm signal until the overheated condition has warmed the area of the tire adjacent the temperature sensor or the internal chamber of the tire. Such warming takes time which allows the condition causing the overheating to worsen before it is detected. The art thus desires a monitoring device that is configured <u>to</u> sense the beginning of the overheated tire condition.

Please amend the paragraph starting at page 6, line 11 of the specification as follows:

Sensor 20 is tuned to create an indication signal upon a predetermined criteria. The predetermined criteria may be a predetermined concentration of target molecules ~~is~~ disposed adjacent the sensor. The predetermined concentration is set to be high enough to avoid false signals while being low enough to allow tire 12 to be inspected to determine if catastrophic tire damage can be avoided. The exact levels will depend on the type of tire being used with sensor 20 and the environment

in which tire 12 is being used. The construction of the tire may also influence the exact settings for sensor 20. The predetermined concentration is also set based on the distance that sensor 20 will be positioned from the tire. In the first embodiment, the user is instructed to bring monitoring device 10 within a given distance of ~~within~~ tire 12 to obtain an accurate reading. The distance may be a half meter or within two meters depending on the calibration of sensor 20. In other embodiments, sensor 20 may be calibrated to function within 5 meters. In the embodiments described below, the distance is fixed and sensor 20 may be calibrated to the known distance. In another embodiment of the invention, the predetermined criteria may ~~simly~~ simply be the presence of a certain molecule that is present in the air during an overheated tire condition.

Please amend the paragraph starting at page 7, line 7 of the specification as follows:

Sensor 20 may be designed to sense any of a variety of components that are ~~know~~ known to be created when a tire is overheated. These components may include various sulfur compounds, monomers of the polymers that are present in the tire rubber, or other compounds that are generated when tire rubber is overheated. Sensor 20 is tuned to sense only molecules generated by hot tire components so that false signals are avoided. Sensor 20 may be any of a variety of sensor types that create a signal when exposed to a gas with selected components from heated rubber. Examples of known sensors that may be used with this invention include those which use LED sensors, catalytic (hot wire), electrochemical, and Metallic Oxide Semiconductor (MOS). Other types of sensors may also be used without departing from the concepts of the present invention.

Please amend the paragraph starting at page 7, line 19 of the specification as follows:

Sensor 20 will thus create a warning signal long before the overheated tire condition generates enough heat to trigger a temperature sensor. The early warning nature of the invention allows the tire to be saved before catastrophic damage occurs. The indication signal created by sensor 20 may be in the form of a visual light, an audible signal, or a scaled number.

Please amend the paragraph starting at page 8, line 3 of the specification as follows:

A second embodiment of the invention is indicated generally by the numeral 110 in Fig. 2. In this embodiment, monitoring device 110 is in the form of a gate-style reader that has one or a pair of sensors 112 disposed at tire 114 level. When the vehicle 116 passes through monitoring device 110, tires 114 are passed adjacent sensors 112. If one of tires 114 is overheated, the molecules generated by overheated tire rubber will be sensed by one of sensors 112 and a warning signal is created. A gate-style reader may be positioned at strategic positions in at a work site where vehicles 116 are required to pass at a ~~know~~ known frequency.

Please amend the paragraph starting at page 9, line 3 of the specification as follows:

A fourth embodiment of the invention is indicated generally by the numeral 210 in Fig. 4. In this embodiment, monitoring device 210 is positioned inside the tire 212[[.]] such that the chemical sensor is exposed to the gas disposed in the tire chamber 214. In one embodiment, monitoring device 210 is connected to the rim 216. In another embodiment, monitoring device 210 is connected to the tire sidewall.

Please amend the paragraph starting at page 9, line 17 of the specification as follows:

Moreover, the description and illustration of the invention is an example and the invention is not limited to the exact details shown or described. In all of the embodiments described above, a temperature sensor and pressure sensor may be used together or ~~alone~~ in combination with sensor 20, 112, 152, 210. Furthermore, various types of protective and/or supportive bodies may be used with the monitoring devices.